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Sent: Wed 7/3/2013 6:52:43 PM
Subject: FW: EPA's Comments on BDCP ADEIS
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You probably received this by Bcc, but I'm forwarding it along just in case...

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Subject: EPA's Comments on BDCP ADEIS

Thank you for the opportunity to review the Second Consultant Administrative Draft Environmental Impact Statement (ADEIS) for the Bay Delta Conservation Plan (BDCP). The purpose of the general comments below is to highlight some of EPA's key concerns surrounding the proposed BDCP and ADEIS. We are providing these comments on the ADEIS for the proposed project in accordance with our role as cooperating agency for this process under the National Environmental Policy Act (NEPA). As requested, we are also providing detailed comments in the table format provided by the Bureau of Reclamation (see attached).

EPA fully understands the urgency of solving water supply and ecosystem problems facing the Bay Delta. We agree that the status quo is not sustainable and that a successful BDCP can be a key part of a comprehensive strategy to address the wide range of problems threatening both water supply reliability and the Bay Delta ecosystem.^[1] Given the importance and complexity of this project, we appreciate this opportunity for early input. At the same time, we must note that this is a unique process. EPA does not typically review NEPA documents concurrent with the lead agency review.

We are aware that the lead Federal agencies have identified significant concerns in their recent Progress Assessments.^[2] We also recognize that the Habitat Conservation Plan (HCP), which is incorporated by reference into the ADEIS, and the Preferred Alternative, evaluated in both, are works in progress. Accordingly, we anticipate substantial revisions to the documents as the lead agencies make revisions to the proposed project and analyses leading up to the publication of the DEIS. Finally, we note that this DEIS is intended to be a programmatic level analysis of the HCP as a whole, but also a site-specific analysis of the proposed tunnel export facility. This approach is unusual, and great clarity is needed in the DEIS to ensure that decision makers and the interested public are not confused by the different levels of analysis.

EPA has reviewed the ADEIS to the extent that workloads and scheduling allowed; however, given the evolving nature of the BDCP, the comments that we are submitting today should not be considered a comprehensive list of all EPA concerns and input related to this project. In this email, we are raising issues and making recommendations in eight key areas based on a focused review of the Preferred Alternative in the ADEIS: Alternatives Analysis; Adverse Impacts on Water Quality; Aquatic Species and Scientific Uncertainty; Impacts on Fish Populations; Programmatic vs. Project Level Analysis; Climate Change; Adaptive Management and Mitigation Commitments; and CWA Section 404. More detailed comments and recommendations are provided in the attached table. EPA will continue to participate in discussions with the co-lead and other cooperating agencies in the months ahead to assist in resolving these and other issues as the DEIS development proceeds. Pursuant to our independent review responsibility under Section 309 of the Clean Air Act, we will also review and comment on the DEIS when it is released for public review and comment.

I. Alternatives Analysis

The NEPA process is intended to help public officials make decisions that are based on an informed understanding of environmental consequences (40 CFR 1500.1(c)). Critical to this is a clear comparison of the impacts of the project alternatives. While the ADEIS contains a wealth of information and many project-level details, it does not clearly distinguish between alternatives with regard to their impacts. The ADEIS generally divides the impacts analyses for the numerous water quality constituents into two subsections: direct project-level impacts from facilities operations, and indirect programmatic-level impacts from tidal and nontidal marsh restoration and other conservation projects. Construction-related impacts and cumulative impacts are discussed in their own separate sections. The ADEIS further divides the direct project-level impacts into three subcategories based on location, i.e., upstream, in Delta, and export service area. Furthermore, all of this is done for each of the ten alternatives,

including the No Action alternative, overlaid with the eleven different operational scenarios A-H4. No comprehensive comparison of alternatives is provided.

While Chapter 11's Summary of Effects compares each alternative's impacts on fish and aquatic resources to those of the Preferred Alternative, we found such comparisons to be of limited value. A more appropriate and informative approach would be to compare each alternative to the No Action alternative with regard to all impacts. We also recommend that the DEIS clarify cause-and-effect relationships between alternatives and impacts and include a comprehensive assessment of the relative magnitude and causes of the predicted decreases in water quality.

The DEIS should sharply distinguish between alternatives and evaluate their comparative merits, consistent with 40 CFR 1502.14(b). The linkages between impacts and their primary causes should be clearly identified, as these are critical to the development of appropriate and effective mitigation strategies. For example, a percentage decrease in salinity at the Jones and Banks pumping plant should be interpreted to make it meaningful, i.e., the DEIS should explain what aspect of the project would cause this. Would this occur because more water would be pumped from the Sacramento River pursuant to certain operations criteria? Would it be the result of increased or decreased flows at Vernalis due to climate change? Why would this impact be the same for all the Alternatives? (p. 8-424).

Changes in Delta hydrology can influence water quality across a broad range of constituents. All of the waterways of the Bay Delta are water-quality impaired for one or more constituents.^[3] In our scoping comments for the BDCP, we suggested that the EIS evaluate the effect of the alternatives on the salinity regime ("X2") and other constituents including boron, total organic carbon, dissolved oxygen, pesticides, mercury, selenium, ammonia and dissolved oxygen.^[4] These parameters were selected through a multiagency and stakeholder effort to identify water quality indicators of highest relevance to protecting the beneficial uses of waters in the Bay Delta system. The ADEIS provides many of the water quality analyses suggested in our scoping letter; however, the following significant improvements are needed to adequately support informed decision making:

- First, the DEIS should evaluate each alternative's expected impacts to determine whether the narrative and numeric water quality standards would be met.

- Second, the DEIS should provide a consistent level of evaluation for each of the parameters across the alternatives and sharply compare the alternatives.

- Third, the DEIS should provide a comprehensive evaluation and comparison of impacts each alternative will have on the quality and quantity of the Bay Delta's aquatic habitats. These habitats are comprised of a mosaic of aquatic and terrestrial features, and occur along a continuum from tidal sloughs to open water, and along a salinity gradient spanning the Estuary. The habitats are essential for the reproduction and survival of migratory and resident fish populations.

Evaluations of aquatic habitats should focus on each alternative's impact on salinity gradients, dissolved oxygen, and/or hydrodynamics. Evaluating the changes to the salinity gradient throughout the year would provide information about the quality and quantity of salinity zones preferred by key fish species for all or parts of their life cycles. Similarly, the DEIS should evaluate potential changes in dissolved oxygen levels and hydrodynamics affecting the continuity and integrity of migratory corridors, which would either improve or degrade the ability of migratory fish to successfully reach the ocean and return to spawning sites. Such information is essential for understanding how each alternative would benefit or negatively impact fish populations.

II. Adverse Impacts on Water Quality

Chapter 8 of the ADEIS indicates that, as proposed, all project alternatives of the BDCP would result in adverse effects to one or more beneficial uses within the affected water bodies. Although incomplete, the material in the ADEIS suggests that the Preferred Alternative would have significant unmitigated adverse impacts on water quality in the Delta. For example:

- The proposed changes in water management would measurably exacerbate impairment of agricultural and aquatic life beneficial uses in the South Delta and Suisun Marsh (p. 425);

- Bromide, chloride, DOC, and salinity/EC levels are expected to increase due to seawater intrusion as a result of both climate change and the implementation of the Preferred Alternative (p. 8-407, 415, 425, 442). In addition, the effectiveness of mitigation actions for salinity/EC is uncertain (p. 426) making it difficult to understand the net effect to salinity/EC levels;

- Mercury, pesticide, and selenium exposure levels may increase and be cumulatively significant (p. 730); and
- Water quality degradation resulting from the increased pumping of freshwater from the North Delta could cause increases in water treatment costs (p.8-408).

As noted in EPA's Bay-Delta Action Plan, most of the water quality constituents identified above are already important stressors on the beneficial uses of the Delta. For example, sport fish in the Delta are already burdened with higher concentrations of mercury than anywhere else in the State,^[5] and the occurrence of this powerful neurotoxin in the food web poses a threat to public health and the ecosystem as a whole. The State Water Resources Control Board (State Water Board) has observed that when the Yolo Bypass is flooded, it becomes the dominant source of methylmercury to the Delta, and that restoration activities could exacerbate the existing mercury problem.^[6] While EPA strongly supports restoration of aquatic habitat in the Delta, care must be exercised to ensure that there are not unintended consequences of restoration actions that adversely affect water quality. The DEIS must include appropriate mitigation measures to address projected adverse impacts on water quality to ensure that beneficial uses would be protected.

The ADEIS appears to evaluate a broad range of construction elements for Conservation Measure 1 (CM1); however, the operational elements appear to be very similar to one another (Table 3-6 p. 3-33). Pursuant to its Strategic Plan, the State Water Board has recently initiated a review of the Bay Delta Water Quality Control Plan (Bay Delta WQCP), including an effort to update the flow standards that define freshwater flows through the Delta. It is reasonable to anticipate that several such State Water Board reviews, as well as significant changes in the regulatory regime affecting Delta exports and outflow, would occur during the fifty-year term of the HCP permit. Given the limited variability of the operational scenarios presented in the ADEIS, the extent to which the operation of CM1 would be able to adjust to such changes is not clear. The DEIS should explain how the operations plans for the BDCP would be adjusted to account for any new regulatory provisions prior to or during the life of the permit.

III. Aquatic Species and Scientific Uncertainty

Compared to the No Action alternative and existing conditions, many of the scenarios of

the Preferred Alternative “range” appear to decrease Delta outflow (p. 5-82), despite the fact that several key scientific evaluations by federal and State agencies indicate that more outflow is necessary to protect aquatic resources and fish populations.^[7] In addition, recent technical reports and emerging research raise questions about whether the proposed restoration of tidal marsh is feasible,^[8] possible^[9], or effective.^[10] These are scientific questions about the assumptions used to support restoration proposals and projections of anticipated benefits to fish populations. We understand that the lead Federal and State agencies and project proponents are engaged in discussions to identify and resolve these scientific issues. Such scientific uncertainties should be disclosed and described in the DEIS, pursuant to NEPA regulations at 40 CFR 1502.22 and 1502.24.

IV. Impacts on Fish Populations

Federal and State agencies have been directed to make all reasonable efforts to at least double the natural production of anadromous fish in California’s Central Valley streams on a long-term, sustainable basis.^[11] The State has adopted this doubling goal as a water quality objective in its WQCP.^[12] The ADEIS estimates, for all alternatives, the water supply benefits to those who receive water from the Central Valley Project (CVP) and State Water Project (SWP) under contract with Reclamation and DWR, respectively (p. 5-83), but provides no estimates of impacts on the sizes of imperiled fish populations that would result from the construction and operation of any alternative, nor under existing and no action conditions. EPA recommends that the DEIS provide a forecast of the potential responses of fish populations to the alternatives, based on a review of available scientific literature.^[13] The DEIS should disclose how each alternative would achieve numeric targets associated with federal and State goals for increasing fish populations.

V. Programmatic vs Project Analysis

The ADEIS states that it takes a programmatic approach toward evaluating all elements of the HCP except for CM1 (the proposed new intakes, twin tunnels, and other infrastructure for new water conveyance), for which the ADEIS states that it takes a project-level approach. The level of engineering detail provided for the tunnels, however, is not commensurate with the level of site-specific information typically provided in an EIS for a project that will require federal permits.^[14] For example, actions (such as grading, dredging, trench and fill, boring, spoils piles, levee work, excavation) that result in impacts to aquatic resources are not detailed (i.e. acres and/or linear feet

of estimated impacts to waters of the US, volume of sediment proposed for disposal sites Part 3, p. 12-22). Thus, it is difficult to fully assess the project-level impacts and mitigation opportunities, and it is not clear whether the project, as proposed, would satisfy requirements for requisite authorizations and permits. We recommend that the DEIS provide a level of detail that supports meaningful calculations of anticipated direct and indirect effects of the project-level elements, and clarify whether this EIS is meant to support a permit decision for CM1.

VI. Climate Change

We appreciate the substantial consideration that climate change has been given in this document. Climate change impacts (sea level rise, shifts and timing of precipitation and snowpack, etc.) have been modeled and incorporated into the No Action and all the Action Alternatives. Project impacts (from the proposed construction and operation of the new conveyance, as well as the other restoration measures) have thus been compared to future conditions with and without climate change. The document concludes that the establishment of a North Delta diversion facility would provide substantial resiliency and adaptation benefits over the No Action alternative for dealing with the combined effects of sea level rise due to climate change (p. 29-15).

EPA believes that, depending on how key components of the BDCP are designed and operated, the BDCP *could* provide climate change resiliency and adaptation benefits; however, we are concerned that the ADEIS attributes adverse effects on aquatic resources solely to climate change without adequate consideration of the extent to which the BDCP, as proposed, could exacerbate – or mitigate – those impacts (e.g., p. Ch 11 SUM-45). Such an approach appears short-sighted and overlooks the fact that the Delta is a highly managed system with a vulnerability to climate change that is, to some degree, a function of its management. In keeping with the co-equal goals of the BDCP, we recommend that the DEIS discuss measures that could be taken to mitigate the impacts of climate change on the aquatic ecosystem (e.g., releasing cold water flows from reservoirs at critical times to protect beneficial uses), in addition to measures to mitigate the impacts of climate change on the water recipients. We look forward to working with the lead agencies and project proponents to identify mitigation strategies that will help buffer the Bay Delta ecosystem from the detrimental effects of climate change and the resulting sea level rise.^[15]

VII. Adaptive Management and Mitigation Commitments

The ADEIS concludes that certain impacts would be reduced to insignificance by mitigation, but does not explain the basis for such conclusions (for example, construction impacts and water quality p. 8-473). Assertions are made that adequate mitigation will be ensured by, for example, the CWA §401 certification process. Any finding that a mitigation measure reduces an impact to a level of insignificance should be supported in the DEIS by a detailed discussion of the basis for that conclusion, including a clear explanation of the assumptions underlying the analysis of mitigation measure effectiveness. The analysis should specifically describe the mitigation measure, identify the source(s) of pollutants that are expected to be affected by the measure, clearly explain how and to what extent the measure will affect the source(s), and identify the basis for the estimate (empirical observations, computer modeling, case studies, etc.).

VIII. CWA Section 404

Although there is no statutory requirement that the NEPA document prepared for an HCP under the Endangered Species Act be used as the basis for permits and certifications required under CWA §404 to authorize and implement the project, EPA recognizes the importance of coordination in federal review. Toward this end, EPA and the Corps have met with the project proponent on numerous occasions over the past several years in the interest of using the BDCP EIS/EIR to inform the Corps' 404 regulatory decisions. Despite these efforts, significant unresolved issues remain about the scope of analysis for the proposed project, the level of detail required to trigger the consultation process and federal permitting, and the structure of a comprehensive permitting framework for the proposed project. We are prepared to continue working with the Corps and the project proponent in the months ahead to seek resolution of these issues.

EPA appreciates this early coordination opportunity and we look forward to continued constructive involvement in the development of the BDCP EIS/EIR. Please see our attached comments detailing some additional concerns and recommendations. If you have any questions about our comments, please call Stephanie Skophammer, the lead NEPA reviewer, or Erin Foresman, the Water Division lead, for this project. Stephanie can be reached at (415) 972-3098 and skophammer.stephanie@epa.gov and Erin can be reached at (916) 930- 3722 and foresman.erin@epa.gov.

1 See p. 21-22 of EPA's 2012 Action Plan

<http://www2.epa.gov/sites/production/files/documents/actionplan.pdf>

2 <http://baydeltaconservationplan.com/BDCPPlanningProcess/DocumentsAndDrafts.aspx>

3 <http://www2.epa.gov/sites/production/files/documents/actionplan.pdf>

4

http://www2.epa.gov/sites/production/files/documents/epa_comments_bdcp_3rdno_051409.pdf

5 SWAMP- Surface Water Ambient Monitoring Program

http://www.waterboards.ca.gov/water_issues/programs/swamp/rivers_study.shtml

6 P. 29 Periodic Review of the 2006 Water Quality Control Plan, State Water Resource Control Board

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/periodic_review/docs/periodicreview2009.pdf

7 State Water Resources Control Board's, 2010 Flows Report, p.2.

"Interior remains concerned that the San Joaquin Basin salmonid populations continue to decline and believes that flow increases are needed to improve salmonid survival and habitat." USFWS May 23, 2011 Phase I Scoping Comments, available at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/cmmnts052311/amy_a

"Inadequate flow to support fish and their habitats is directly and indirectly linked to many stressors in the San Joaquin river basin and is a primary threat to steelhead and salmon." NMFS February 4, 2011 Phase I Scoping Comments, available at:

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"...current Delta water flows for environmental resources are not adequate to maintain, recover, or restore the functions and processes that support native Delta fish." Executive Summary in 2010 CDFG Flow Criteria.

"a strong majority of scientists prioritizes habitat and flow management actions that would restore more natural processes within and upstream of the delta" (p. 2) http://www.ppica.org/content/pubs/report/R_413EHR.pdf

8 NMFS Progress Assessment and Remaining Issues Regarding the Administrative Draft BDCP Document (04/4/2013), page 15.

9 U.S. Fish and Wildlife Service Staff BDCP. The broad concern is that the tidal prism would be diminished over time by the large increases in tidal habitat..

10 Lucas, L. V., and J. K. Thompson. 2012. Changing restoration rules: Exotic bivalves interact with residence time and depth to control phytoplankton productivity. *Ecosphere* 3(12):117.

<http://www.esajournals.org/doi/pdf/10.1890/ES12-00251.1>. The issue raised is whether the increased production of plankton by the restored wetlands would be offset by the increased consumption by exotic bivalves as they spread into the restored wetlands..

11 1992 Central Valley Protection Improvement Act. In its 2005 update to the implementation plan for the Anadromous Fish Restoration Program (AFRP), FWS estimated the flow volumes that would be necessary to 'double' the natural production of certain Central Valley salmonids.

12 "measures in the watershed, sufficient to achieve a doubling of natural production of Chinook salmon from the average production of 1967-1991, consistent with the provisions of State and federal law." State Water Resources Control Board, 13 December 2006, Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, (Bay-Delta WQCP). Table 3, pp. 14.

13 Kimmerer, W. J. 2002. Effects of freshwater flow on abundance of estuarine organisms: Physical effects or trophic linkages? *Marine Ecology Progress Series* 243:39-55 United States Fish and Wildlife Service, September 27, 2005.

<http://www.int-res.com/abstracts/meps/v243/p39-55/>

Recommended Streamflow Schedules To Meet the AFRP Doubling Goal in the San Joaquin River Basin (FWS 2005), pp. 27.

[http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/docs/sjrf s](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/docs/sjrf_s)

14 p. 6 NMFS Progress Assessment <http://baydeltaconservationplan.com/BDCPPlanningProcess/DocumentsAndDrafts.aspx>

15 Climate Change Handbook for Regional Water Planning <http://www.water.ca.gov/climatechange/CCHandbook.cfm>

Vulnerability Assessments in Support of the Climate Ready Estuaries Program: A Novel Approach Using Expert Judgment, Volume I: Results for the San Francisco Estuary Partnership
<http://cfpub.epa.gov/ncea/global/recordisplay.cfm?deid=241556>

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[1] See p. 21-22 of EPA's 2012 Action Plan

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[2] <http://baydeltaconservationplan.com/BDCPPlanningProcess/DocumentsAndDrafts.aspx>

[3] <http://www2.epa.gov/sites/production/files/documents/actionplan.pdf>

[4]

http://www2.epa.gov/sites/production/files/documents/epa_comments_bdcpl_3rdno_051409.pdf

[5] SWAMP- Surface Water Ambient Monitoring Program

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[6] P. 29 Periodic Review of the 2006 Water Quality Control Plan, State Water Resource Control Board

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[8] NMFS Progress Assessment and Remaining Issues Regarding the Administrative Draft BDCP Document (04/4/2013), page 15.

[9] U.S. Fish and Wildlife Service Staff BDCP. The broad concern is that the tidal prism would be diminished over time by the large increases in tidal habitat..

[10] Lucas, L. V., and J. K. Thompson. 2012. Changing restoration rules: Exotic bivalves interact with residence time and depth to control phytoplankton productivity. *Ecosphere* 3(12):117. <http://www.esajournals.org/doi/pdf/10.1890/ES12-00251.1>. The issue raised is whether the increased production of plankton by the restored wetlands would be offset by the increased consumption by exotic bivalves as they spread into the restored wetlands..

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[14] p. 6 NMFS Progress Assessment <http://baydeltaconservationplan.com/BDCPPlanningProcess/DocumentsAndDrafts.aspx>

[15] Climate Change Handbook for Regional Water Planning <http://www.water.ca.gov/climatechange/CCHandbook.cfm>

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